

MISSOURI MONTHLY VITAL STATISTICS

Provisional Statistics

FROM THE

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Focus... *Firearms-Related Deaths in Missouri: Trends and Comparison with U.S.*

Introduction

Injuries and deaths resulting from firearms are a relatively recent concern of the public health community. Firearms account for one-fifth of all injury deaths in the U.S. and are second only to motor vehicles as a cause of fatal injury.¹ From 1968 through 1991, the number of firearm-related deaths increased by 60 percent nationwide, while motor-vehicle-related deaths decreased by 21 percent. This led to the prediction, in an MMWR article in 1994, that 'if these trends continue, by the year 2003, the number of firearm-related deaths will surpass the number of motor-vehicle crashes, and firearms will become the leading cause of injury-related death'.² Fortunately, in the years since 1991, the national trend has reversed course. Though the number of firearm-related deaths was still unacceptably high in 1997, it had fallen to 32,436, or 24 percent below the 42,473 motor vehicle-related deaths.

Missouri has a significant number of firearm-related injuries as well. In fact, Missouri's firearm-related death rate is higher than the nation's. In examining firearm-related deaths, this report looks at the relationship of firearm-related suicides and homicides to firearm-related deaths overall. (Deaths that are unintentional or due to unknown intention each make up less than three percent of the firearm-related deaths and are not discussed.) Following the comparison of Missouri and the U.S., the trend in Missouri's firearm-related deaths over the past decade is reviewed.

Comparisons with the U.S.

In 1997, the latest year for which U.S. data are available, Missouri had a higher death rate from all firearms use than existed nationally. The rate in Missouri was 14.8 per 100,000 population, compared to a rate of 12.1 in the U.S.³ If the rate in Missouri had equaled the national rate, the number of firearm-related deaths would have gone down from 797 to 654, a reduction of 18 percent.

Missouri's excess is largely accounted for by the high rate of suicides committed with firearms. In 1997, Missouri's firearm-related suicide rate was 29 percent higher than the U.S. rate (8.5/100,000 vs. 6.6/100,000). Rates of homicides committed with firearms were not significantly different in Missouri and the U.S. As discussed below, however, this was because the relatively low rate of homicides among whites in Missouri masked a significant excess among blacks.

Race

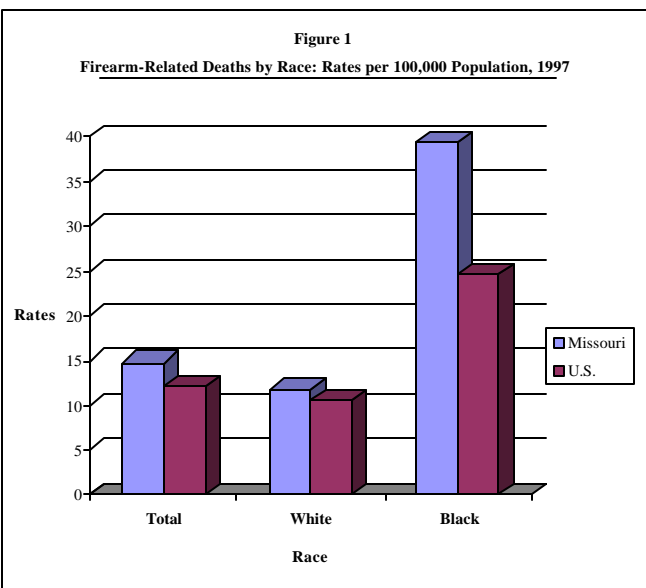
As Figure 1 indicates, the burden of firearm-related deaths fell more heavily on Missouri blacks than on blacks nationally. In 1997, the rate among Missouri blacks was 59 percent higher than the rate among U.S. blacks (39.3/100,000 Vs 24.7/100,000). In contrast, the rate for Missouri whites exceeded the rate for U.S. whites by only 12 percent (11.8/100,000 Vs 10.5/100,000).

Homicides were the main contributor to the high rate of black deaths in Missouri. The rate of firearm-related homicides was 60 percent higher among Missouri blacks than among U.S. blacks in 1997 (32.6/100,000 Vs 20.4/100,000). Whites, on the other hand, had a rate that was 21 percent lower in Missouri than in the U.S. (2.2/100,000 vs. 2.8/100,000).

Suicides committed with firearms were more likely in Missouri among both whites and blacks. The difference was statistically reliable only for whites, however. The rate of 9.0 per 100,000 population among Missouri whites was 25 percent higher than the comparable U.S. rate of 7.2. The firearm-related suicide rate for blacks was 5.2 per 100,000 in Missouri and 3.6 in the U.S.

Sex

Males were mainly responsible for the difference in firearm-related deaths between Missouri and the U.S. The firearm-



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related death rate for Missouri males in 1997 was 23 percent higher than the U.S. rate (26.1/100,000 Vs 21.2/100,000). Missouri females had a rate of 4.1, which did not differ significantly from the U.S. rate of 3.4.

The high rate among males in Missouri was due to suicides committed with firearms. The rate for firearm-related suicides among males was 34 percent higher in Missouri than in the U.S. (15.5/100,000 Vs 11.6/100,000). The rate for females did not differ significantly in Missouri and the U.S. (1.9/100,000 Vs 1.7/100,000).

Age

The number of firearm-related deaths in Missouri in 1997 was not large enough to allow comparison by age group, so Missouri and the U.S. were compared over the combined years of 1996 to 1998 (Table 1). During this period, Missouri's firearm-related death rate was substantially higher than the U.S. rate in most of the age groups over age 24. The biggest difference was among those aged 35-44, where Missouri's rate exceeded the U.S. rate by 41 percent (18.6/100,000 Vs 13.2/100,000).

Missouri's elderly population was not far behind. The rate for those aged 85-and-over exceeded the U.S. rate by 35 percent, while the rate for 75-84-year olds exceeded it by 31 percent.

Suicides were the largest contributor to the excess of firearm-related deaths. The age groups noted above all experienced higher rates for firearm-related suicide deaths in Missouri than in the U.S.: Missouri's rate was 47 percent higher among the 35-44-year olds (11.0/100,000 Vs 7.5/100,000), 45 percent higher among those aged 85-and-over (18.6/100,000 Vs 12.8/100,000), and 38 percent higher among the 75-84-year olds (18.9/100,000 Vs 13.7/100,000).

Trends in Missouri

During this decade, the peak for firearm-related deaths was reached in 1994, when nearly 1000 Missourians died after being shot with a firearm. In fact, the peak rate for this century was reached that year. The 1994 rate of 18.9 per 100,000 population represents a 29 percent increase over the rate just 10 years prior—in 1984, the rate was at a 30-year low of 14.7 per 100,000 population (738 deaths).

Table 1
Firearm-Related Deaths by Intent and Age Group: Missouri Vs the U.S., Rates per 100,000 Population, 1997**

Age Group

<u>Intent</u>	<u>0-4</u>	<u>5-14</u>	<u>15-24</u>	<u>25-34</u>	<u>35-44</u>	<u>45-54</u>	<u>55-64</u>	<u>65-74</u>	<u>75-84</u>	<u>85+</u>	<u>Total</u>
All Injuries											
MO Total	6	38	532	518	488	272	172	156	149	55	2389
MO Rate	0.5	1.6	23.8	22.8*	18.6*	13.6*	12.4	13.3	19.5*	19.3*	14.7*
US Total	84	546	8173	7045	5802	3872	2390	2202	1740	555	32436
US Rate	0.5	1.4	22.3	17.8	13.2	11.5	11.0	11.9	14.9	14.3	12.1
Homicides											
MO Total	5	15	310	265	180	81	27	23	2	1	912
MO Rate	0.5	0.6	13.8	11.7*	6.9*	4.0	1.9	2.0*	0.3	0.4	5.6
US Total	62	285	5171	3794	2288	1096	450	228	91	39	13522
US Rate	0.3	0.7	14.1	9.6	5.2	3.3	2.1	1.2	0.8	1.0	5.1
Suicides											
MO Total	0	14	199	240	287	185	137	130	144	53	1389
MO Rate	0	0.6	8.9*	10.6*	11.0*	9.2*	9.9	11.1	18.9*	18.6*	8.6*
US Total	0	127	2587	3010	3321	2647	1859	1906	1608	494	17566
US Rate	0	0.3	7.1	7.6	7.5	7.9	8.5	10.3	13.7	12.8	6.6
Unintentional and Undetermined											
MO Total	1	9	23	13	21	6	8	3	3	1	88
MO Rate	0.1	0.4	1.0	0.6	0.8	0.3	0.6	0.3	0.4	0.4	0.5
US Total	22	134	415	241	193	129	81	68	41	22	1348
US Rate	0.1	0.3	1.1	0.6	0.4	0.4	0.4	0.4	0.3	0.6	0.5

* Indicates Missouri's rate is significantly higher than the U.S. rate at the .05 probability level.

**U.S. data are for 1997; Missouri data are totals for 1995-1997 with an average rate for those three years.

Note: three records with unknown ages are included in the row totals for the All Injuries and Homicide categories for Missouri.

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From the 1994 peak in firearm-related deaths, the rate has fallen 29 percent to 13.4 per 100,000 in 1998. The principal reason is a large drop in homicides committed with firearms. Between 1994 and 1998, the rate went from 8.2 to 5.3, a decline of 35 percent.

Suicides committed with firearms dropped substantially as well. Over the same period, the firearms-related suicide rate fell 20 percent, from 9.7/100,000 to 7.8/100,000.

Race

The most significant trend has been the reduction in firearm-related homicides among blacks since the early part of the decade (Figure 2.) From 330 such deaths in 1993, the number has dropped almost by half, to 181 in 1998. This represents a rate reduction of 48 percent (57.4/100,000 to 29.5/100,000). The rate of firearm-related homicides for whites has decreased half as much, dropping 19 percent from its high point in 1994 (2.7/100,000 to 2.2/100,000).

Along with the drop in homicides among blacks has come a substantial reduction in firearms-related suicides. Rates of 6.5 per 100,000 population in both 1994 and 1996 have come down to 3.8 in 1998, a drop of 42 percent. Again, whites have seen a less dramatic decline. Their rate of 10.2 per 100,000 in 1994 has come down to 8.4 in 1998, a drop of 18 percent. These trends have contributed to declines in firearm-related deaths overall of 39 percent for blacks and 14 percent for whites.

Sex

Both males and females have benefited from the decrease in firearm-related deaths. Regarding homicides committed with firearms, the rate for males has decreased 40 percent since 1993 (15.1/100,000 to 9.0/100,000). During this same period, the rate for females has decreased 32 percent (2.5/100,000 to 1.7/100,000).

Suicides due to firearms have dropped for both sexes as well. Males have seen a 22 percent decline since their high point in 1994 (17.9/100,000 to 13.9/100,000). Females have experienced a 20 percent decline since 1990 (2.4/100,000 to 2.0/100,000).

Age

All age groups have seen a reduction in firearms-related deaths, but the youngest and oldest have benefited the most.

The rate for 5-14-year olds has decreased 45 percent from its peak in 1991 (3.5/100,000 to 1.9/100,000), while the rate for 15-24-year olds has decreased 53 percent from its peak in 1993 (41.8/100,000 to 19.6/100,000). The rate for 55-64-year olds has decreased 49 percent since 1990 (18.2/100,000 to 9.2/100,000), as has the rate for 75-84-year olds (27.2/100,000 to 14.8/100,000).

The decrease in deaths among young adults is due to a decline in both suicides and assaults committed with firearms. For example, among 15-24-year olds, the rate for firearm-related suicides decreased 39 percent between 1995 and 1998 (12.7/100,000 to 7.8/100,000). In the same age group, firearm-related homicide rates decreased 58 percent between 1993 and 1998. Older individuals were less likely to die of homicides, and their decrease in firearm-related deaths was due to a drop in suicides committed with firearms. Reductions of 49 percent (18.2/100,000 to 9.2/100,000), 31 percent (17.3/100,000 to 12.0/100,000) and 49 percent (27.3/100,000 to 14.0/100,000) occurred in those aged 55-64, 65-74 and 75-84, respectively.

Conclusion

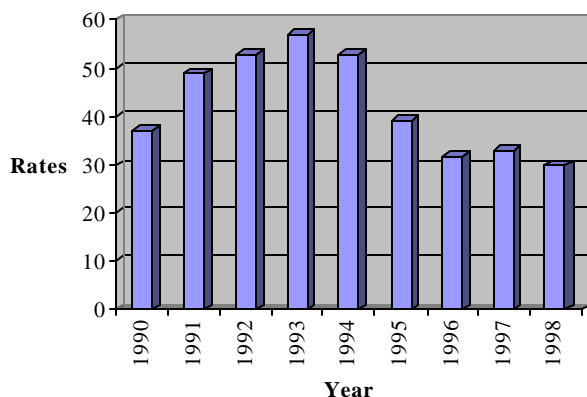
The excess in firearm-related deaths in Missouri relative to the U.S. is due largely to the higher rate of suicides committed with firearms in Missouri, particularly among males. In 1997, Missouri's overall suicide rate was 15 percent higher than the U.S. rate (13.1/100,000 Vs 11.4/100,000). If there had been no suicides committed with firearms, the suicide rate in Missouri would have been slightly lower than the rate nationwide (4.7/100,000 Vs 4.8/100,000). Thus, a preference for firearms in Missouri probably contributes to a higher suicide rate overall, as well as to a higher rate of firearms-related deaths.

Though the excess in firearms related deaths in Missouri is related to suicides, the recent decline in firearms-related deaths owes more to the decrease in homicides committed with firearms. This reduction has been especially pronounced among blacks: the 1998 rate of 29.5 per 100,000 population is just above the 30-year low of 27.9 reached in 1983. The causes of this favorable trend are a matter of debate. Some have suggested that community policing and stronger enforcement have made the difference. Additionally, researchers have found a strong relationship between socioeconomic status and homicides.⁴ The favorable economy during the last few years, and the extremely low rate of unemployment, are likely contributors to the decrease in firearms-related deaths among both blacks and whites.

References

1. Centers for Disease Control. Deaths: Final data for 1997. Vital Statistics Reports, 1999; 47: 71.
2. Centers for Disease Control. Deaths resulting from firearm- and motor-vehicle-related injuries—United States, 1968-1991. MMWR, 1994; 45: 37-42.
3. Centers for Disease Control. Deaths: Final data for 1997. Vital Statistics Reports, 1999; 47: 69.
4. Centerwall BS. Race, socioeconomic status, and domestic homicide. JAMA 1995; 273: 1755-1758.

Figure 2
Trend in Firearm-Related Homicides for Blacks:
Rates per 100,000 Population, 1990-1998



Provisional Vital Statistics for February 2000

LIVE BIRTHS totaled 6,210 in February, virtually the same as the 6,208 in February 1999. Cumulative births for the 2- and 12-months periods ending with February both show increases.

DEATHS decreased in February as 4,956 Missourians died compared with 5,469 one year earlier. Cumulative deaths for the 2- and 12-month periods ending with February both show increases.

The **NATURAL INCREASE** in February was 1,254 (6,210 births minus 4,956 deaths). This compares with a natural increase of 739 in February 1999.

MARRIAGES increased for all three periods shown below. A total of 2,357 Missouri couples married in February compared with 1,912 one year earlier.

DISSOLUTIONS OF MARRIAGE decreased slightly in February as 2,083 couples divorced compared with 2,095 in February 1999. For the 12 months ending with February dissolutions decreased by 1.9 percent.

INFANT DEATHS show no significant changes for any of the time periods shown below.

PROVISIONAL RESIDENT VITAL STATISTICS FOR THE STATE OF MISSOURI

Item	February				Jan.-Feb. cumulative				12 months ending with February				
	Number		Rate*		Number		Rate*		Number		Rate*		
	1999	2000	1999	2000	1999	2000	1999	2000	1998	1999	1998	1998	2000
Live Births	6,208	6,210	14.8	14.3	11,413	12,461	12.9	13.6	75,095	76,806	13.6	13.8	14.0
Deaths	5,469	4,956	13.0	11.4	9,771	10,977	11.0	12.0	52,905	56,161	10.1	9.7	10.3
Natural increase...	739	1,254	1.8	2.9	1,642	1,484	1.9	1.6	22,190	20,645	3.5	4.1	3.8
Marriages	1,912	2,357	4.5	5.4	4,728	5,068	5.3	5.5	43,622	45,654	8.1	8.0	8.3
Dissolutions	2,095	2,083	5.0	4.8	4,033	4,506	4.6	4.9	25,592	25,129	4.7	4.7	4.6
Infant deaths	53	51	8.5	8.2	92	96	8.1	7.7	582	592	7.7	7.8	7.7
Population base (in thousands)	...	...	5,468	5,500	...	...	5,468	5,500	...	...	5,413	5,444	5,474

* Rates for live births, deaths, natural increase, marriages and dissolutions are computed on the number per 1,000 estimated population. The infant death rate is based on the number of infant deaths per 1,000 live births. Rates are adjusted to account for varying lengths of monthly reporting periods.

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